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A study of weight-preoccupied college women.

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A Study of Weight-Preoccupied College Women

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ABSTRACT

This study was conducted to examine a group of college women who may be at risk to develop eating disorders. The first aim of the study was to replicate a cluster analysis of weight-preoccupied women conducted by Garner, Olmsted, Polivy and Garfinkel (1984). The second goal of this study was to compare the two clusters of weight-preoccupied women with not weight-preoccupied women in four areas: relationship, family, emotional, and perceptual characteristics. Female college students from a state University were administered a battery of self-report measures pertinent to this investigation. This study was able to replicate the cluster analysis. The two weight-preoccupied clusters when compared with each other and with the not weight-preoccupied group were not found to differ in family characteristics or in most relationship characteristics. Differences were found between the three groups on some emotional and perceptual characteristics, although these differences were not consistent with the cluster hypothesis proposed by Garner and his colleagues. Instead, both of the weight-preoccupied clusters displayed more emotional and perceptual disturbance than the not weight-preoccupied group. These results support the continuum hypothesis.

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CHAPTER I

INTRODUCTION

Anorexia nervosa and bulimia, two serious eating disorders, have become increasingly more prevalent over the past decade (Garfinkel & Garner, 1982), and, consequently, have inspired much research. Recent research on eating disorders has turned toward prevention. Vandereycken and Meermann (1984) argue that secondary prevention, which aims to reduce the morbidity and chronicity of disorders by early identification and intervention, is a "realistic wish" which should be pursued in the area of anorexia nervosa and bulimia. Research supporting the value of this approach suggests that early recognition of eating disorders may be associated with beneficial prognosis (Crisp, Kalucy, Lacey, & Harding, 1977; Hsu, Crisp, & Harding, 1979; Morgan & Russell, 1975).

One avenue to pursue in this effort of early identification is to look in high risk populations for women who exhibit anorexic behaviors without displaying the entire syndrome. The assumption is that anorexic symptomatology, specifically the pursuit of thinness and fear of fat, may exist on a continuum with the disorder 'anorexia nervosa' as the most extreme point.

This 'continuum hypothesis' has evoked heated debate among researchers. Is anorexia nervosa the endpoint on a

continuum of concern about thinness, or is it a distinct syndrome that is qualitatively different from excessive dieting? Clinical theorists have argued that anorexia nervosa is qualitatively different as a syndrome than the practice of extreme dieting that has gotten out of control (Bruch, 1973, 1977; Crisp, 1980). Those advocating the continuum hypothesis (e.g., Button & Whitehouse, 1981; Fries, 1977; Nylander, 1971) support their position with evidence of an etiological role of cultural factors in the development of eating disorders (Garfinkel & Garner, 1982) and with studies indicating a 'continuum' of anorexic symptomatology in 'non-anorexic' populations (Button & Whitehouse, 1981; Fries, 1977; Nylander, 1971). Recent research examining women with anorexic symptomatology has found qualitative differences compared with anorexia nervosa patients (Garner, Olmstead, Polivy, & Garfinkel, 1984; Thompson & Schwartz, 1982; Weeda-Mannak, Drop, Smits, Strijbosch, & Bremer, 1983) and bulimic patients (Katzman & Wolchik, 1984); nonetheless, a subgroup of these 'subclinical anorexics' has been found to exhibit additional pathology (Garner et al., 1984). The aim of the current study is to explore this subgroup further.

Modern western society places a tremendous emphasis on thinness, for women in particular. The social and psychological ramifications of being overweight are devastating (Wooley & Wooley, 1979). Although the average

weight, independent of height, of American women has been increasing over the past twenty years, the ideal weight has steadily decreased, thus making the ideal more difficult to achieve (Garner, Garfinkel, Schwartz, & Thompson, 1980). The observation that anorexia nervosa occurs predominantly within specific age, sex, and social class distributions and is increasing in prevalence (Garner, Garfinkel, & Olmstead, 1983; Schwartz, Thompson & Johnson, 1983) further supports the hypothesis that socio-cultural factors play a role in its development.

In a study of Swedish adolescents, Nylander (1971) found that "feeling fat" and dieting were particularly common among females and that almost 10% of the women surveyed reported at least three anorexic behaviors in connection with weight loss. He suggested that prolonged dieting may actually lead to mild or severe variations of anorexia nervosa and that the difference between the mild and severe cases was one of degree only. Fries (1977) also argued for the continuum hypothesis. He posited that the uncontrollable dieting displayed by anorexics may be the final stage in a progression beginning with voluntary slimming for "more or less legitimate reasons" (p.167). In support of his hypothesis, Fries (1977) found anorexic symptoms in women who had a history of secondary amenorrhea and weight loss but did not satisfy the diagnostic criteria for anorexia nervosa. Garner and Garfinkel (1980) examined

populations under intense pressures to be thin (professional dance and modelling students) and found, in addition to an overepresentation of anorexia nervosa in these populations, many of the women displayed anorexic symptomatology but did not meet diagnostic criteria for the disorder. Similarly, Button and Whitehouse (1981) identified anorexic symptoms in college women who scored in the anorexic range on the Eating Attitudes Test (Garner & Garfinkel, 1979), a commonly used self-report measure assessing behaviors associated with anorexia nervosa. The four most common symptoms were weight loss of 9 kg. or more, amenorrhea of greater than six months, self-induced vomiting, and overactivity. Button and Whitehouse (1981) termed these cases 'subclinical anorexia nervosa' and believed that some of these women, who had begun dieting for cosmetic reasons, would subsequently develop anorexia nervosa.

There is considerable evidence in support of the contention that anorexic symptomatology related to concerns about food and weight exist in individuals who do not meet all the criteria for anorexia nervosa. However, this does not necessarily imply that the continuum of weight preoccupation is associated with a continuum of pathology. Studies examining psychological functioning in women who exhibit anorexic-like symptomatology have found qualitative differences between anorexic women and anorexic-like women (Garner et al., 1984; Thompson & Schwartz, 1982; Weeda-

Mannak et al., 1983) as well as between bulimic women and bulimic-like women (Katzman & Wolchik, 1984).

Thompson & Schwartz (1982) compared female college students with high scores on the EAT (Garner & Garfinkel, 1979) to female college students with low scores and to women with primary anorexia as diagnosed using Feighner criteria (Feighner, 1972). Although the high-EAT group was similar to the anorexic group in displaying anorexic behaviors such as binge-eating and self-induced vomiting, the two groups differed in their social adjustment and family relations. The high-EAT college group and the low-EAT college group displayed adequate functioning in social adjustment and family relations while the anorexic group exhibited marked deficits in these areas. Weeda-Mannak et al. (1983), attempting to address a similar question, examined behavioral and psychological characteristics of patients with anorexia nervosa, secondary amenorrhea, and healthy asymptomatic subjects. Some psychological characteristics shared between the anorexia group and the amenorrhea group that distinguished them from the control group were a need for achievement and a need for approval, while the fundamental difference between the anorexia and amenorrhea groups was in fear of failure. Garner et al. (1984) also compared psychological traits of patients with anorexia nervosa to those of weight-preoccupied and not weight-preoccupied college women. Weight-preoccupied women

were selected on the basis of extreme scores on the Drive for Thinness subscale of the Eating Disorder Inventory (EDI) (Garner, Olmsted, & Polivy, 1983a, 1983b), a self-report measure of psychological and behavioral traits common in anorexia nervosa and bulimia. Anorexia nervosa patients differed from weight-preoccupied and not weight-preoccupied women in subscales measuring ineffectiveness, interpersonal distrust, and lack of interoceptive awareness. Interestingly, ineffectiveness and lack of interoceptive awareness are two of Bruch's fundamental features of anorexia nervosa (1973). Katzman and Wolchik (1984) compared normal weight bulimics to women who engaged in binge eating eight or more times a month but did not fulfill diagnostic criteria for bulimia and controls. They found that bulimics were significantly more depressed and had lower self-esteem, poorer body image, higher self-expectations, and higher need for approval than either of the two comparison groups. These findings indicate that although anorexic and bulimic behaviors seem to fall on a continuum in society, they may not necessarily signify pathology.

The question now focuses on whether weight-preoccupation or other anorexic-like symptoms indicate pathology in some people and whether criteria can be established to identity those people. A further question concerns the extent to which these criteria are predictive of future eating disorders. Garner and his colleagues

attempted to examine the first question in the previously described study of weight-preoccupied women (1984). They divided the weight-preoccupied group into two groups using cluster analysis procedures. One cluster was characterized by elevated scores on all EDI subscales, while the other cluster only had elevated scores on the Drive for Thinness, Body Dissatisfaction, and Perfectionism subscales. The authors described the later cluster as "normal dieters" who resemble anorexics only superficially in their dieting behaviors. The former cluster, however, was interpreted as "displaying psychopathology quite similar to anorexia nervosa" (p.265). Button and Whitehouse (1981) subdivided their sample of high EAT-scoring college students intuitively rather than statistically and came up with three groups: 'normal dieters', 'abnormal preoccupation with weight and food intake', and 'vomiters and purgers'. They found that the vomiters and purgers who had had episodes of being below normal weight were the most similar to 'true' anorexics; however, they did not report any statistical analyses examining group differences and acknowledged that the distinction between the groups (in terms of deciding which group to put a subject in) was not very precise. Thompson and Schwartz (1982) also reported heterogeneity in their group of women manifesting high levels of anorexic-like behaviors, although they did not try to analyze this within group variability.

As the above findings suggest, our pursuit of secondary prevention of eating disorders might be aided by reexamining the cluster of weight-preoccupied women that Garner et al. (1984) identified as displaying psychopathology similar to anorexia nervosa. The current study attempted to identify this group using the EDI and then examined other characteristics of that group compared to two other groups: (1) those weight-preoccupied women who do not show further pathology on the EDI and, (2) non-weight-preoccupied women. Relationship, family, perceptual, and emotional characteristics commonly associated with eating disorders were examined as they relate to this cluster of weight-preoccupied women.

Relationship Characteristics

People suffering from eating disorders generally have few extra-familial relationships (both romantic and friendship) and report dissatisfaction with the few relationships they have (Garfinkel & Garner, 1982). Crisp (1980) views fear of growing up and of becoming involved in extra-familial relationships (especially sexual ones) as one of the core etiological factors of anorexia nervosa. Thompson and Schwartz (1982) found that significantly fewer anorexics reported having had sexual intercourse than women who displayed anorexic-like behaviors. Halmi, Goldberg, Eckert, Casper, and Davis (1977) found not only a preponderance of disinterest in sex in anorexics, but one-

third of her sample actually found sex disgusting. In the current study, the quantity and nature of friendship and romantic extra-familial relationships were examined. Additionally, satisfaction with those relationships and frequency of sexual thoughts were considered.

Family Characteristics

Considerable research has been done examining the families of people suffering from eating disorders (e.g., Kalucy, Crisp, & Harding, 1977; Minunchin, Rosman, & Baker, 1978; Morgan & Russell, 1975; Rakoff, 1983). Families have been clinically described as enmeshed, characterized by excessive togetherness and sharing and by weak boundaries separating the parental and child subsystems (Minuchin et al., 1978). This propensity for extremely close intrafamily dependence has been observed in demographic studies of anorexic populations (Kalucy et al., 1977). One study of college students did not find a relationship between perceived family patterns (i.e., enmeshed vs. disengaged) and binge eating or dieting (Kagen & Squires, 1985); however, they did not examine whether a relationship may have existed for a subgroup of these students. Additionally, methodological flaws discussed by Kagen and Squires may have affected their results.

Anorexic families have been reported to be predominantly middle and upper class (Bruch, 1973; Garfinkel & Garner, 1982; Halmi et al., 1977; Kalucy et al., 1977;

Morgan & Russell, 1975) and white (Halmi et al., 1977) although there is some evidence that the incidence is becoming more evenly distributed throughout classes as the disorder becomes more common (Garfinkel & Garner, 1982; Rakoff, 1983). Researchers and clinicians have noticed a tendency for the parents of anorexics to be older at the time of the patient's birth than controls (Bruch, 1973; Garfinkel & Garner, 1982; Theander, 1970). There is also some evidence that anorexics tend to be first born children (Bruch, 1973) and have at least one sibling (Halmi et al., 1977) although these findings have not been consistent across all studies (Garfinkel & Garner, 1982).

Unusual parental concern about food and eating has also been observed in anorexic families (Garfinkel & Garner, 1982; Kalucy et al., 1977). Lastly, anorexics have been described to have been the 'model child' in the family prior to becoming sick (Bruch, 1973; 1977). In fact, in one sample of anorexic families, 86% of the parents reported that their anorexic child had been very well behaved premorbidly (very well behaved was the highest of four choices) (Halmi et al., 1977).

The current study examined both demographic family characteristics as well as family dynamics. Unfortunately, due to limited resources and lack of access to the families of our subjects, no family interactional data or direct information from other family members was collected.

Emotional Characteristics

Anorexics have been described as obsessive, neurotic, introverted, and anxious (Solyom, Freeman, & Miles; 1982; Smart, Beumont, & George, 1976) as well as having low self-esteem (Garfinkel & Garner, 1982). Additionally, depression has been noted in anorexic populations especially in anorexics who exhibit bulimic behaviors (Garfinkel & Garner, 1982). Katzman and Wolchik (1984) have also found normal weight bulimics to be more depressed than controls or binge eaters who did not meet diagnostic criteria for bulimia. An adjective checklist was utilized in the current study to examine emotional states and traits.

Body Perception

Two areas were considered in exploring perceptual characteristics of weight-preoccupied women: self-perception of body size and perception of other peoples' body sizes.

Hilde Bruch (1961, 1962, 1973, 1977) was the first clinical theorist to outline what she believed to be the three central areas of abnormality in anorexics: body image disturbances, interoceptive disturbances, and a pervasive feeling of ineffectiveness. Scales designed to assess interoceptive disturbances and ineffectiveness are included on the EDI. The third area of abnormality described by Bruch, body image disturbance, is not included on the EDI, and, thus, was not considered in the study of weight-

preoccupied women conducted by Garner et al. (1984). It was therefore examined further in the current study.

Bruch's first observations of body image disturbances in anorexics have inspired numerous empirical studies examining perceptual disturbances associated with anorexia nervosa (see Garner & Garfinkel, 1977 and Garfinkel & Garner, 1982 for reviews). Two aspects of body image disturbances have been associated with eating disorders. The first aspect deals with an ability to accurately assess the anatomical parameters of one's body size. The second aspect involves the perception of one's subjective self regardless of whether or not one accurately perceives one's anatomical size. Although there is some inconsistency, overall, most studies have found that anorexics tend to perceive themselves to be heavier than they actually are (in terms of both anatomical and subjective perceptions) and that this misperception is significantly greater for anorexics than controls. Overestimation of body size has also been associated with a worse prognosis and with bulimic behaviors in anorexic patients (Freeman, Thomas, Solyom, & Miles, 1983; Garfinkel, Moldofsky, & Garner, 1977; Goldberg, Halmi, Casper, Eckert, & Davis, 1977). Unfortunately, due to limited resources, it was only possible to assess subjective perceptions of body size and not anatomical perceptions in the current study.

The literature on body size perception has focussed primarily on perception of one's own body. Few studies have examined whether the misperception is confined to one's own body size or whether it is more general. Goldberg et al. (1977) did find that although their population of anorexics had distorted perceptions of their own body size, they were able to accurately perceive the size of a wooden block. To address this issue in the current study, misperception of parental subjective weight category was examined. In other words, could the subject accurately perceive the weight category of other people (i.e., her parents).

It was hypothesized that the sub-cluster of weight-preoccupied women, as identified by the EDI, who exhibit further pathology on the EDI would display more characteristics commonly associated with eating disorders than either the weight-preoccupied women who do not show further pathology on the EDI or the non-weight-preoccupied group.

In summary, this study addressed two questions:
1) Can the cluster analysis of weight-preoccupied women conducted by Garner et al. (1984) be replicated such that two subgroups are yielded with one of the two being a more pathological group as measured by the EDI?
2) If such a cluster is identified, what relationship, family, emotional, and perceptual characteristics are associated with it?

CHAPTER II

METHOD

Subjects

The majority of subjects were recruited from undergraduate psychology courses at the University of Massachusetts. Students responded to signs soliciting volunteers to fill out a psychology survey. In exchange for their participation, subjects received experimental credits which they could turn in for extra-credit points in psychology courses. Additional subjects were recruited from the varsity gymnastic team at the University of Massachusetts. In order to maintain the representativeness of the sample, subjects were not informed about the content of the questionnaire until they were about to begin, at which point, they had the option to leave. No subjects chose to leave. Names, addresses, and telephone numbers were collected for possible follow-up studies; however, subjects were informed that all information was confidential and anonymous (see Appendix A).

Since this study was part of a larger project examining eating behavior in college students, both males and females were encouraged to participate. For the purposes of this study, however, only females were included in the analyses. A total of 253 female students from psychology courses and 10 female students from the gymnastics team completed the survey.

Measures

Eating Disorder Inventory (EDI) (Garner, Olmstead, & Polivy, 1983a, 1983b). The EDI is a 64 item, self-report measure designed for the assessment of psychological and behavioral traits common in anorexia nervosa and bulimia . The EDI, a theoretically derived, but empirically refined and validated measure, has been found to reliably differentiate between anorexia nervosa and comparison groups. It consists of eight subscales measuring 1) Drive for Thinness, 2) Bulimia, 3) Body Dissatisfaction, 4) Ineffectiveness, 5) Perfectionism, 6) Interpersonal Distrust, 7) Interoceptive Awareness and 8) Maturity Fears.[1] (see Appendix B).

Primary Emotions and Traits Scale (PETS) (Epstein, 1983). The PETS Scale is a checklist of 85 emotion related adjectives. Subjects rate how frequently they experience each of the emotions on a 5-point scale. The PETS scales were derived factor analytically and contain scales of emotional states (positive state, happiness vs. depression, calmness vs. anxiety, agreeableness vs. anger, caring vs.

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[1] The direction of the scale (always--never) was reversed in the questionnaire (never--always) in order to keep the scales in the questionnaire consistent for the subjects. For analysis purposes, however, the scores were transposed back to the original system developed by Garner, Olmstead, and Polivy, such that high scores reflect greater pathology, in order to make the reported means consistent with the literature.

uncaring, and vigor vs.fatigue) as well as personality traits (extroversion, neuroticism, ego-strength, self-esteem, and integration)(see Appendix C).

The PETS was standardized on 468 female and 250 male undergraduate students at the University of Massachusetts. Reliability coefficients (internal consistency) for all scales were above .80. The PETS scales were found to correlate impressively with scales from other inventories including the Eysenck Personality Inventory (1969) and the Guilford-Zimmerman Temperament Survey (1979).

Body Perception. The subjects were asked whether they considered themselves to be underweight, normal weight, or overweight. By comparing perception of size to normative categories based on average height and weight tables from the U.S. National Center for Health Statistics (1980), self-misperception of weight category was determined.

Subjects were also asked whether they considered their parents (individually) to be underweight, normal weight, or overweight. Elsewhere, subjects were asked to estimate their parents' height and weight. Parental weight category misperception based on average tables was calculated.

Additional information. Subjects answered questions pertaining to demographic and descriptive areas (e.g., age, height, weight, etc.), family structure, and relationships.

Selection of Weight-Preoccupied Group

Women who, on the Drive for Thinness scale of the EDI, scored at or above the mean score of 15 cited in the literature for anorexic populations (Garner et al., 1984) were selected as the weight-preoccupied group (WP). The not-weight-preoccupied group (NWP) was comprised of women who scored below 2 on the Drive for Thinness scale, which was the 50th percentile in the sample. This selection method is identical to the method described by Garner et al., 1984. A total of 110 women fit the criteria for the NWP group and 31 women qualified for the WP group.

In order to reduce the likelihood of either WP or NWP women actually meeting the diagnosis of anorexia nervosa, Garner and his colleagues eliminated women who had ever lost 20% of their highest weight and currently had amenorrhea for at least six months. In the present study a similar elimination procedure was used. Women who had ever lost more than 20% of their highest weight were eliminated if they indicated 'never' on the questionnaire item "I have regular menstrual periods". Four subjects from the WP group and one subject from the NWP group were excluded by these criteria. This brought the total for the NWP group to 109 and the WP group to 27.

Cluster Analysis of Weight-Preoccupied Group

The WP subjects were further divided into two subgroups by using an iterative optimization cluster analysis technique based on seven scales from the EDI: Interoceptive Awareness, Bulimia, Body Dissatisfaction, Ineffectiveness, Maturity Fears, Perfectionism, and Interpersonal Distrust (the Drive for Thinness scale was not used since it was the basis for selecting the WP group). This technique ensures that each individual is more similar, in terms of euclidian distance, to the average individual in the cluster to which she is assigned than to the average individual in any other cluster in terms of the seven EDI scales. This is the same procedure used by Garner and his colleagues (1984).

CHAPTER III

RESULTS

The sample was comprised primarily of young, upper-middle class, single, white women. The mean age was 20 years old (SD=1.8). Fifty-seven percent of the subjects' fathers were professionals, 23% held managerial jobs, 1% held clerical jobs, 15% were skilled laborers, and 4% worked as unskilled laborers. Thirty-four percent of the subjects' mothers were professionals, 11% held managerial jobs, 24% worked in a clerical job, 16% were homemakers, 7% were skilled laborers, and 6% held jobs as unskilled laborers. Ninety-two percent of the sample of women were single, 6% were living with a significant other, and 2% were married. The racial composition of the sample was 87% caucasian, 5% asian, 3% black, 3% native american, and 2% hispanic.

In general, the subjects as well as their mothers and, to a lesser extent, their fathers, weighed less than the average weights of Americans of similar age, sex, and height. The mean subject weight was 94% of average (SD=10.4). Mothers of subjects weighed 92% of average (SD=14.8) and fathers' mean weight was 98.7% of average (SD=14.5).

The mean lowest weight of this sample of women was 84% of average (SD=42.4) and the mean highest weight was 101% of average (SD=18.8). Overall, subjects felt their ideal

weight to be 86% of the American average for their height (SD=6.9).

Weight-Preoccupied Group

The two groups, WP and NWP were comparable in age, lowest weight, and desired weight. The WP group weighed 91% of average for their height while the NWP group weighed 97% of average for their height. This difference was statistically significant ($F(1,124)=8.69$, $p<.004$). The WP group was also significantly heavier for their height at their highest adult weight than the NWP group (WP mean highest weight= 111% of average, NWP mean highest weight=95% of average; $F(1,124)=14.66$, $p<.002$)(see Table 1). The two groups did not differ in either parental occupational status or parental weight.

The WP and NWP groups differed from each other significantly on all scales of the EDI. As expected, the WP group scored in the more pathological direction than the NWP group on every scale (Interoceptive Awareness: $F(1,134)=96.717$, $p<.00001$; Bulimia: $F(1,134)=79.155$, $p<.00001$; Body Dissatisfaction: $F(1,134)=49.502$, $p<.00001$; Ineffectiveness: $F(1,134)=24.456$, $p<.00001$; Maturity Fears: $F(1,134)=12.317$, $p=.0006$; Perfectionism: $F(1,134)=7.965$, $p=.0055$; Interpersonal Distrust: $F(1,134)=7.879$, $p<.006$.) (see Table 2).

Cluster Analysis of Weight-Preoccupied Group

The first cluster, WP1, contained 17 women and the second cluster, WP2, contained 10 women. Within the two clusters, the mean distance to the cluster center was 11.3 (SD=3.6). The distance between the two cluster centers was 14.4.

There were no significant differences between the two clusters in age, weight, lowest weight, highest weight, or desired weight (see Table 3).

The second cluster, WP2, scored more pathologically on all of the seven EDI scales used to divide the groups, with five of the seven scales reaching statistical significance (Interoceptive Awareness: $F(1,25)=22.631$, $p<.0001$; Bulimia: $F(1,25)=16.054$, $p<.0001$; Body Dissatisfaction: $F(1,25)=14.671$, $p=.001$; Ineffectiveness: $F(1,25)=4.311$, $p=.048$; Interpersonal Distrust: $F(1,25)=14.107$, $p=.001$). The two clusters did not differ significantly on the Maturity Fears scale or the Perfectionism scale. Additionally, the two clusters did not differ on the Drive for Thinness scale of the EDI, a scale which did not contribute to the cluster analysis (see Table 4).

Paired t-tests were conducted to compare the two WP clusters with the NWP group on the EDI subscales. The p level was set at .002 in order to keep the family-wise error rate at .05.

The more deviant cluster (WP2) differed from the NWP cluster on six of the eight EDI subscales (Interoceptive awareness: $t=6.597$; Bulimia: $t=4.345$; Body Dissatisfaction: $t=10.582$; Ineffectiveness: $t=3.023$; Interpersonal distrust: $t=3.575$; Drive for Thinness: $t=22.561$; for all: $df=117$; $p<.002$). There were no statistically significant differences between the two groups on the Maturity Fears or the Perfectionism scales (the same two scales on which the WP1 and WP2 clusters did not differ).

The less deviant weight-preoccupied cluster (WP1) differed significantly from the NWP group only on the Interoceptive Awareness, Bulimia, Body Dissatisfaction, and Drive for Thinness subscales (Interoceptive Awareness $t=4.535$; Bulimia: $t=4.276$; Body Dissatisfaction: $t=3.941$; Drive for Thinness: $t=41.900$; for all $df=124$, $p<.002$). The WP1 cluster did not differ from the NWP group on the Ineffectiveness, Maturity Fears, Perfectionism, or Interpersonal Distrust subscales (see Figure 1).

When contrasting the WP clusters with the published percentiles for female college students in general (Garner, Olmsted, & Polivy, 1983), the WP1 cluster scored within the normal range on all scales except the Drive for Thinness scale. The WP2 group, on the other hand, scored above the 90%ile on all scales except the Interpersonal Distrust scale.

The mean EDI subscale scores for the two clusters of weight-preoccupied women were similar to the mean EDI subscale scores of the two clusters derived from Garner's sample in 1984 (see Table 5 for a review of those means. In the table, the standard error of each mean published by Garner et al., was converted into standard deviation in order to be congruous with the reporting in this paper). Garner's two clusters differed significantly on six of the seven subscales that contributed toward the cluster analysis (Interoceptive Awareness, Bulimia, Body Dissatisfaction, Ineffectiveness, Maturity Fears, and Interpersonal Distrust). The two clusters did not differ on the Perfectionism subscale in Garner's sample. In the current study, the Perfectionism subscale also did not significantly differentiate the two clusters. Unlike Garner's sample, however, the Maturity Fears subscale score, in the present sample, was not significantly different between the two weight-preoccupied clusters.

The two samples appeared to have similar means on the individual EDI subscale scores for the 'less pathological' cluster of weight-preoccupied women. Although Garner's cluster of more deviant WP women had means that are comparable to the WP2 cluster, they do tend to be a bit more elevated on all the subscales, especially the Ineffectiveness subscale.

In Garner's sample, the more deviant cluster had elevated means on all 8 of the EDI subscales, while the less deviant cluster had elevated scores on Body Dissatisfaction, Perfectionism, and Drive for Thinness only.

Comparison of Groups on Other Measures

The three groups, NWP, WP1, and WP2, were compared using Analysis of Covariance techniques on items pertaining to relationships, family characteristics, emotional characteristics, and body perception. The variance due to the subject's weight was statistically partialled out because the NWP group weighed significantly less than either of the two WP groups.

Relationship Characteristics. Two types of peer relationships were examined, friendship and romantic relationships. The items addressing romantic relationships included questions asking about the subject's current dating status and the subject's desired dating status, the total number of romantic relationships in which the subject had been involved in her lifetime, her satisfaction with her dating relationships, and how often she had sexual thoughts. There were no significant overall group differences in response to items addressing romantic relationships. The items pertaining to friendship relationships included questions about the number of close friends the subject had before attending college, the number of close friends the

subject had at college, her satisfaction with her friendships, and the subject's own assessment of her ability to be a good friend. The only item that yielded a significant overall effect regarding friendship relationships was the number of close friends the subject had prior to attending college (see Table 6). The NWP group had fewer friends prior to attending college ($x=3.8$, $SD=1.4$) than did the WP1 group ($x=4.6$, $SD=1.0$; $t=4.622$, $df=124$, $p<.005$).

Family Characteristics. The groups were compared on demographic and dynamic characteristics pertaining to families. The demographic characteristics that were examined included the number of siblings, the subject's birth order, parental age and occupation, and parental weight. The items designed to understand family dynamics included questions about the closeness of the family, the frequency that the family eats together, parental concern about the subject's eating behaviors, parental concern about the subject's academic performance, and the degree to which the subject obeyed her parents as a child. No overall significant effects were detected for any of the variables examined (see Table 7).

Emotional Characteristics. The PETS scales were used to measure emotional characteristics. Significant overall differences were found in the factors positive state,

neuroticism, ego-strength, calmness v. anxiety, and self-esteem (see Table 8).

Planned t-tests were conducted on the items which had overall significant F-values. A p of .005 was used for each comparison in order to keep the family-wise alpha level at .05.

The means and standard deviations for the three groups on the factor positive v. negative state were 75.9(10.3) for the NWP group, 65.6(13.1) for the WP1 group, and 60.2(14.6) for the WP2 group. The NWP group was found to be significantly more positive than either the WP1 or the WP2 group (NWP-WP1: $t=3.096$, $df=124$, $p<.005$; NWP-WP2: $t=3.325$, $df=117$, $p<.005$). Although the WP1 group tended to be more positive than the WP2 group, this difference was not statistically significant at the .005 level.

The WP2 group was significantly more neurotic ($x=30.5$, $SD=9.9$) than the NWP group ($x=39.6$, $SD=7.1$; $t=2.840$, $df=117$, $p<.005$). The mean for the WP1 group was in between the mean for the NWP and WP2 group ($x=35.8$, $SD=6.3$) but was not statistically different from either.

On the factor, high self-esteem v. low self-esteem, the NWP group had a mean of 21.5 ($SD=3.7$), the mean for the WP1 group was 17.8 ($SD=4.1$), and the WP2 group had a mean score of 17.5 ($SD=6.4$). The only comparison that was significantly different at the .005 level was the NWP-WP1

comparison, with the WP1 group having lower self-esteem than the NWP group ($t=3.504$, $df=124$, $p<.005$).

The NWP group had a mean score of 47.0 (SD=5.4) on the ego-strength v. ego-weakness factor. This mean was significantly higher, indicating greater ego-strength, than the mean for either the WP1 group ($x=41.9$, $SD=5.8$) or the WP2 group ($x=38.3$, $SD=8.1$; NWP-WP1 comparison: $t=3.402$, $df=124$, $p<.005$; NWP-WP2 comparison: $t=3.329$, $df=117$, $p<.005$). Again, the WP1 group had a higher mean than the WP2 group, but this difference was not significant.

The scores on the factor, calmness v. anxiety, indicated that the WP2 group was more anxious than the NWP group (WP2: $x=13.9$, $SD=5.1$; NWP: $x=20.0$, $SD=4.4$; $t=3.659$, $df=117$, $p<.005$). The WP1 group scored in the middle of the two other groups ($x=18.2$, $SD=4.0$) and approached significance in the comparison with each of the other groups, but did not meet the .005 level requirement (NWP-WP1 comparison: $t=1.702$, $df=124$, $p<.05$; WP1-WP2 comparison: $t=2.285$, $df=25$, $p<.025$).

Body Perception. All subjects were divided into three weight categories: underweight, normal weight, and overweight. Underweight was defined as weighing less than or equal to 15% of the average weight for the subject's height. Normal weight was defined as weighing between 15% less and 15% greater than the average weight for one's height. A subject was considered overweight if she weighed

greater than or equal to 15% of the average weight for her height.

On another item, subjects had been asked whether they considered themselves to be underweight, normal weight, or overweight. If a subject was underweight or normal weight and considered herself to be overweight, she was defined as a misperceiver. This procedure was similar to that of Harmatz (1987) in his examination of misperception in normal and underweight women.

When subjects were divided into the three weight categories (under, normal, or overweight) there was no statistical difference between the NWP, WP1, and WP2 groups, therefore, weight category was not controlled for in the body perception analyses.

Fourteen percent of the NWP group were classified as misperceivers. In contrast, 77% of the WP1 group and 90% of the WP2 group were misperceivers. This difference was statistically significant ($x^2 = 49.53$, df=2, $p<.0001$).

The same technique was used to classify mothers and fathers, separately, as underweight, normal weight, and overweight. The subjects were compared on the accuracy of their perceptions of their parent's weight category. Five percent of the NWP group inaccurately judged their mothers' weight category. The corresponding figures for the WP1 and WP2 groups were 6% and 20%, respectfully ($x^2 = 4.03$, df=2,

ns.). Most subjects from all three groups accurately judged their fathers' weight category (see Table 9).

Table 1

Descriptive Characteristics of WP and NWP Groups

	Means (SD)	
	NWP (N=109)	WP (N=27)
Age	20.5 (1.9)	20.0 (1.1)
Weight*[a]	91.0 (9.6)	97.1 (9.1)
Lowest adult weight*	79.7 (11.2)	83.3 (17.0)
Highest adult weight*[b]	95.1 (15.7)	111.5 (30.6)
Desired weight*	86.4 (6.2)	85.7 (5.2)

* expressed as a percentage of average for age and height
[a] $p<.01$
[b] $p<.001$

Table 2

Mean Scores on EDI subscales
of WP and NWP Groups

	Adjusted Mean (SD)*	
	NWP (N=109)	WP (N=27)
Interoceptive Awareness[b]	1.4 (2.0)	7.3 (5.0)
Bulimia[b]	.5 (.8)	5.1 (5.2)
Body Dissatisfaction[b]	7.9 (5.5)	17.7 (6.7)
Ineffectiveness[b]	1.4 (2.7)	4.7 (4.6)
Maturity Fears[a]	1.8 (2.3)	3.7 (3.4)
Perfectionism[a]	4.3 (3.6)	7.1 (3.6)
Interpersonal Distrust[a]	1.7 (2.4)	3.1 (3.0)
Drive for Thinness**[b]	0.9 (0.8)	16.9 (1.9)

* means after variance due to current weight was partialled out, derived from analysis of covariance.
** This scale was used to assign NWP and WP groups.
[a] $p<.01$
[b] $p<.0001$

Table 3

Descriptive Characteristics of WP1 and WP2 Clusters

	Means (SD)	
	WP1 (N=17)	WP2 (N=10)
Age	20.1 (1.1)	19.8 (1.2)
Weight*	97.4 (10.7)	96.6 (5.9)
Lowest adult weight*	82.1 (21.4)	85.2 (5.8)
Highest adult weight*	114.9 (38.1)	105.7 (7.7)
Desired weight*	85.9 (5.7)	85.4 (4.4)

* expressed as a percentage of average for age and height

Table 4

Mean Scores on EDI subscales
of the two WP Clusters

	Mean (SD)	
	WP1 (N=17)	WP2 (N=10)
Interoceptive Awareness[b]	4.6 (2.8)	11.7 (4.9)
Bulimia[b]	2.6 (2.0)	9.3 (6.4)
Body Dissatisfaction[b]	14.6 (6.0)	22.9 (4.0)
Ineffectiveness[a]	3.4 (3.1)	7.0 (5.8)
Maturity Fears	2.8 (1.9)	5.2 (4.9)
Perfectionism	5.8 (4.1)	9.4 (5.7)
Interpersonal Distrust[b]	1.8 (2.0)	5.4 (3.1)
Drive for Thinness**	16.5 (1.5)	17.4 (2.3)

** This subscale was not used in the cluster analysis.
[a] $p \leq .05$
[b] $p \leq .001$

Table 5

Mean Scores from the Garner et al. (1984) Study on the EDI subscales of the two WP Clusters

	Mean (SD)	
	WP cluster 2* (less pathological) (N=24)	WP cluster 1 (more pathol.) (N=11)
Interoceptive Awareness[a]	5.0 (3.7)	13.6 (6.6)
Bulimia[a]	4.6 (4.1)	12.6 (4.3)
Body Dissatisfaction[a]	14.6 (6.9)	24.1 (3.0)
Ineffectiveness[a]	2.8 (2.7)	14.4 (7.6)
Maturity Fears[a]	2.6 (2.2)	8.2 (6.7)
Perfectionism	8.5 (2.6)	10.4 (2.9)
Interpersonal Distrust[a]	1.6 (2.2)	7.1 (3.9)
Drive for Thinness	15.8 (0.9)	18.8 (1.2)

[a] cluster 1 > cluster 2, planned t-tests with p=.02
* Note: Garner et al. used reversed labelling from the current study: They labelled their deviant cluster, "WP cluster 1" and their less deviant cluster, "WP cluster 2".

Table 6

Relationship Characteristics of
NWP, WP1 and WP2 Groups

		NWP (N=109)	WP1 (N=17)	WP2 (N=10)
Romantic relationships:				
Currently dating:	nobody	25%	35%	40%
	casually	21%	24%	10%
	seriously	51%	41%	50%
	married	3%	0%	0%
		100%	100%	100%
Wish to be dating:	nobody	5%	6%	0%
	casually	26%	35%	30%
	seriously	60%	59%	70%
	married	9%	0%	0%
		100%	100%	100%
		Adjusted mean (SD)*		
Total number of relationships		2.8(1.4)	2.8(1.3)	3.3(1.4)
Satisfaction with relations (0=low 6=high)		4.3(1.8)	3.2(2.2)	3.0(2.3)
Frequency of sex thoughts (0=low 6=high)		3.8(1.5)	3.4(1.6)	4.0(2.1)
Friendships:				
Number of close friends prior to college[a]		3.8(1.4)	4.8(0.7)	4.6(1.0)
Number of close friends currently		3.5(1.5)	3.9(1.5)	3.5(1.0)
Satisfaction with relations (0=low 6=high)		5.1(1.1)	5.2(1.3)	3.9(1.8)
Ability to be a friend (0=low 6=high)		5.4(.8)	5.5(0.7)	5.6(0.7)

* means after variance due to current weight was partialled out, derived from analysis of covariance.

[a] NWP<WP1, planned t-test with p=.005 for each comparison.

Table 7

Family Characteristics of
NWP, WP1 and WP2 Groups

	Adjusted mean (SD)*		
	NWP (N=109)	WP1 (N=17)	WP2 (N=10)
Demographic characteristics:			
Number of natural siblings	2.6(1.5)	2.6(1.8)	1.7(1.6)
Birth order (0=oldest 2=youngest)	1.1(0.8)	1.1(0.9)	.8(0.8)
Father's age (0=under 40 8=76+)	2.6(1.4)	2.3(1.2)	2.8(1.9)
Mother's age (0=under 40 8=76+)	2.1(1.1)	2.0(1.2)	2.1(1.4)
Father's occupational status (0=unskilled 6=professional)	4.1(1.6)	4.1(1.9)	5.1(1.1)
Mother's occupational status (0=unskilled 6=professional)	4.1(1.6)	4.1(1.9)	5.1(1.1)
Father's weight as a % of avg.	96(15.2)	99(14.9)	98(13.4)
Mother's weight as a % of avg.	93(15.8)	92(13.8)	88(10.6)
Family dynamics:			
Closeness of family (0=low 6=high)	4.6(0.8)	4.8(0.9)	5.3(0.9)
Number of times family eats together/week	4.4(2.0)	4.9(2.3)	4.1(2.8)
Parental concern about subject's eating (0=low 6=high)	3.1(1.9)	3.8(1.6)	4.2(1.6)
Parental concern about subject's academics (0=low 6=high)	4.7(1.6)	3.7(2.0)	5.3(1.3)
Obeyed parents as a child (0=low 6=high)	4.6(1.4)	4.9(1.4)	5.3(0.8)

* means after variance due to current weight was partialled out, derived from analysis of covariance.

Table 8

Emotional Characteristics of
NWP, WP1 and WP2 Groups

	Adjusted mean (SD)*		
	NWP (N=109)	WP1 (N=17)	WP2 (N=10)
Factors from PETS:			
Positive v. neg. state[a]	75.9(10.3)	65.6(13.1)	60.2(14.6)
Non-neuroticism v. neuroticism[b]	39.6(7.1)	35.8(6.3)	30.5(9.9)
extroversion v. introversion	45.7(7.0)	47.2(3.6)	46.6(5.1)
High self-esteem v. low self-esteem[c]	21.5(3.7)	17.8(4.1)	17.5(6.4)
Integration v. disintegration	20.5(4.3)	18.3(3.9)	16.6(4.7)
Ego-strength v. ego-weakness[a]	47.0(5.4)	41.9(5.8)	38.3(8.1)
Calmness v. anxiety[b]	20.0(4.4)	18.2(4.0)	13.9(5.1)
Happiness v. depression	44.7(5.5)	40.7(6.4)	40.2(6.3)
agreeableness v. anger	24.3(4.5)	24.4(4.4)	22.3(6.4)
caring v. uncaring	32.4(4.2)	34.1(4.2)	33.3(6.2)
vigor v. fatigue	22.8(3.9)	21.6(4.3)	21.8(3.8)

* means after variance due to current weight was partialled out, derived from analysis of covariance.

[a] NWP>WP1,WP2, planned t-test with p=.005 for each comparison.

[b] NWP>WP2, planned t-test with p=.005 for each comparison.

[c] NWP>WP1, planned t-test with p=.005 for each comparison.

Table 9

Percent of Subjects Misperceiving Body Weight by Group

	NWP (N=109)	WP1 (N=17)	WP2 (N=10)
self[a]	14%	77%	90%
mother	5%	6%	20%
father	6%	6%	0%

[a] x^2 (df=2)=49.5, p=.0001

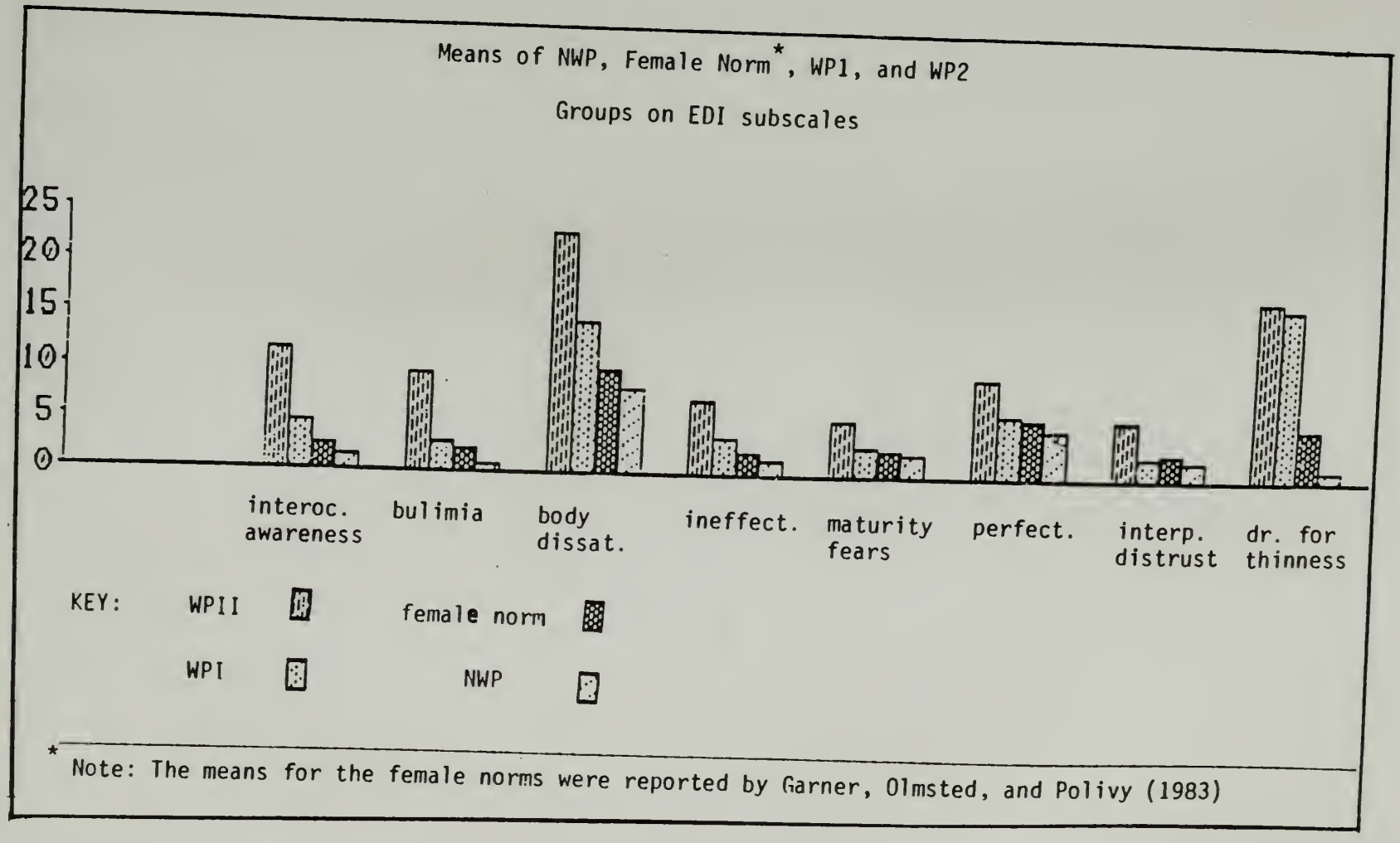

Figure 1 Means of NWP, Female Norm, WP1, and WP2 Groups on EDI subscales

CHAPTER IV

DISCUSSION

Garner, Olmstead, Polivy, and Garfinkel (1984) cluster analyzed a sample of weight-preoccupied women into two groups based on their EDI subscale scores. They found one group that scored as high or higher than an anorexic comparison group on all of the subscales. The other cluster had elevated scores on the Drive for Thinness (since this was the basis for selection), Body Dissatisfaction, and Perfectionism subscales only. They described their cluster of weight-preoccupied women who had elevated score on all EDI subscales as probably suffering from a 'subclinical variant' of anorexia nervosa, while the cluster who had EDI scores primarily within the typical range for female college students as 'normal dieters' who illustrate "that the pursuit of thinness is not associated with psychopathology for all women" (p.264).

The first goal of this study was to replicate the cluster analysis of weight-preoccupied women conducted by Garner and his colleagues (1984). The current sample of weight-preoccupied women, when broken down into two clusters, resembled Garner et al.'s sample in that one more pathological cluster and one cluster with scores on the EDI subscales that were within the normal college range was yielded. In that sense, we were able to replicate the earlier study.

Our sample of weight-preoccupied women seemed similar to the sample in the earlier study. Ten percent of the college women in this sample qualified to be in the weight-preoccupied group (i.e., 10% scored at or above the anorexic mean on the Drive for Thinness scale of the EDI). This percentage is similar to the 9% of college women in Garner et al.'s sample (1984) and the 8% of college freshmen women in a recent sample from a private, northeastern, catholic university (Raciti & Norcross, 1987) who were identified as weight-preoccupied by the same criteria.

The NWP group weighed significantly more than the WP group in the current study as well as in the study conducted by Garner and colleagues. Surprisingly, though, this had little effect on the items being examined. Very few means changed after they were adjusted for the variance due to the weight difference between the groups.

Our two clusters of weight-preoccupied women also seemed similar to the two clusters identified by Garner et al. (1984) in regard to the EDI subscale scores. It did appear that the less deviant cluster (WP1) was more similar to the female norms and the not weight-preoccupied group than to the more deviant (on the EDI) weight-preoccupied cluster.

The primary question then became whether the more deviant cluster (WP2) on the EDI exhibited further pathology and characteristics that resembled eating disorder patients.

Additionally, we were interested in whether the other, less deviant, weight-preoccupied cluster (WP1) would be more similar to the NWP group in the other areas in spite of their intense desire to be thinner, indicating that their preoccupation with thinness did not reflect maladjustment in other areas of their lives.

Relationship Characteristics

The three groups did not differ on most items pertaining to either romantic or friendship relationships. The only significant difference was that women in the WP1 cluster had more close friends prior to attending college than did women in the NWP group. Since the groups did not differ in the number of close friends at college, it seems that women in the WP1 cluster had not been as successful socially in college as they were prior to attending college, relative to women in the NWP group. It is possible that the transition may have been more difficult for this group. Nonetheless, they were not doing poorly in their social relations at college. Furthermore, the WP1 cluster had been predicted not to differ from the NWP group.

The WP2 cluster did not appear to be similar to the typical woman suffering from an eating disorder as far as relationships were concerned. Whereas anorexics have been found to have few extra-familial relationships and report dissatisfaction with those they have (Crisp, 1980; Garfinkel

& Garner, 1982), both of the weight-preoccupied clusters claimed to have a typical number of relationships (both with friends and lovers) and reported satisfaction with their relationships. They also judged themselves to be a good friend. Investigators have found that anorexics are uninterested in sexual relationships and thoughts. Again, in this sample, the women in the WP2 and WP1 clusters reported thinking about sex as often as did the not weight-preoccupied women.

It is not clear why this deficit in social relations, viewed by some as the core etiological factor in anorexia nervosa (e.g., Crisp, 1980), was not found in the WP2 cluster. One possibility is that the items lacked precision which might have revealed true differences. The items pertaining to relationship characteristics were written by the investigators and had not been standardized or tested on large populations to determine their psychometric efficacy. For example, the definition of 'close' friend may have been too inconsistent between people.

Another explanation might be that social isolation comes late in the anorexic process and is a consequence rather than a contributor to the disorder. In this case, the social isolation found in anorexic patients may not yet have affected this group of women who may still be at high risk for developing the disorder. There have not yet been

prospective, longitudinal studies of this phenomenon to determine the likelihood of this explanation.

The final possibility is that social isolation is a fundamental, etiological aspect of eating disorders which was not found in either weight-preoccupied cluster. Thus, although the WP2 group resembled anorexics in some ways (e.g., EDI scores), it may only have been a superficial resemblance and not an indicator of vulnerability for the disorder.

Family Characteristics

None of the demographic or dynamic family characteristics differentiated the three groups. The reason for this is probably a combination of factors.

First, like the relationship questions, the family questions lacked precision. Some of the items such as birth order, parental age, and parental occupational status were collapsed into a few categories in order to make responding simpler. This decreased the variability and power of the items.

A second factor is the discrepancy in the literature on populations of women with eating disorders regarding family characteristics. Although the traditional anorexic has been described as an upper-middle class, white, over-obedient child from an enmeshed family, the incidence has become more evenly distributed demographically across the population

(Garfinkel & Garner, 1982; Rakoff, 1983). This factor would lead to decreased demographic differences in at-risk populations.

The third factor contributing to the inability to find family differences among the three groups is that we may not have been looking at the right family variables. Kog, Pierloot, and Vandereycken (1983), in a discussion of methodological considerations of family research in anorexia nervosa, pointed out that demographic research and individual psychopathological investigations of parents are governed by a linear causality paradigm, which is obsolete in current ideology about a family component in eating disorders. Instead, research should be focussed on family interaction and be guided by a circular interaction paradigm. Since we did not have access to the families of the subjects, and therefore, could not ask the appropriate circular questions, we may not have discovered family differences that may well exist.

Of course, the alternative hypothesis is that, again, this group is fundamentally different than the population of women with eating disorders and is not at risk for developing an eating disorder.

Although none of the items yielded significant differences, the means of the groups tended to be in the predicted direction. For example, the fathers of the WP2 subjects tended to be older than the fathers of either the

NWP or the WP1 groups. Both parents of the WP2 subjects tended to hold jobs of higher status than did parents of either other group. The WP2 cluster tended to have closer families than did the WP1 or NWP groups. Parents of the WP2 cluster tended to be more concerned about their daughter's academic performance and eating behaviors. Also, the WP2 subjects tended to feel that they had obeyed their parents as a child to a greater extent than did either of the other groups. In conclusion, the weight-preoccupied women who fell into the cluster with more deviant EDI subscale scores tended to look more similar to demographic and dynamic profiles of women with eating disorders than did not weight-preoccupied women or weight-preoccupied women who had less deviant EDI subscale scores. The three factors described above, instrument precision, demographic leveling in incidence rates, and lack of interactional data, may have contributed to the failure to obtain significance.

Emotional Characteristics

Five of the eleven PETS scales showed statistical differences between the groups (positive-negative state, non-neuroticism-neuroticism, self-esteem, ego-strength, and calmness-anxiety). In all cases, the NWP group showed more positive scores than the WP1 cluster or the WP2 cluster or both. Although the WP1 and WP2 clusters did not differ from

each other statistically, the WP2 group tended to show the most negative attributions.

If Garner et al. (1984)'s hypothesis had been correct, we would have expected the WP2 cluster to have the most negative scores and both the NWP group and the WP1 cluster to have equally positive scores. This was not the case. Instead, the scores tended to reflect more of a continuum. Subjects from both the weight-preoccupied clusters were more negative and neurotic, had lower self-esteem, lower ego-strength, and were more anxious than non weight-preoccupied women. However, the women who had elevated EDI scores on all subscales tended to be even more emotionally disturbed than the weight-preoccupied women who had less elevated EDI subscale scores. Thus, the data supports the 'continuum hypothesis' which posits that the differences between the groups are quantitative in nature with the women who demonstrated the most aberrant eating related responses being proportionally more disturbed in other areas then the less aberrant weight-preoccupied women.

Emotionally, eating disordered women have been described as neurotic, anxious, depressed, introverted, and as having low self-esteem. The weight-preoccupied women in this sample did score in a more neurotic and anxious direction and did answer in directions indicative of lower self-esteem. Although the means reflected greater depression and introversion in the weight-preoccupied sample

than in the not weight-preoccupied group, the difference was not significant.

In summary, the weight-preoccupied group seemed more emotionally distraught than the not weight-preoccupied group in similar ways that have been reported in anorexic women. The women in the WP1 cluster were more similar to the women in the WP2 cluster in their scores on the emotional factors than they were to the NWP women. This finding is more consistent with the continuum hypothesis than with the cluster hypothesis suggested by Garner and his colleagues.

Body Perception

The most striking differences were found between the weight-preoccupied women and the not weight-preoccupied women in the area of self body perception. While most of the not weight-preoccupied women accurately placed themselves in the correct weight category, the overwhelming majority of the weight-preoccupied women from both clusters inaccurately considered themselves to be overweight. Interestingly, these women were able to perceive others (specifically, their parents) in the correct weight category. Thus, their poor perception was confined to themselves.

Three possibilities could explain this finding. The weight-preoccupied women may have inaccurately perceived the parameters of their own bodies, but correctly perceived the

boundaries of the normative weight category, 'overweight'. Another possibility is that the weight-preoccupied women accurately perceived the dimensions of their own bodies, but had more stringent definitions of the category 'overweight' for themselves only. The third alternative is that some combination of the first two possibilities was operating.

Body image disturbance, according to Hilde Bruch (1961, 1962, 1973, 1977), is one of the three fundamental areas of abnormality at the core of anorexia nervosa. The majority of women in both clusters of weight-preoccupied women displayed body image disturbances in the perception of their own weight category. The not weight-preoccupied women, for the most part, did not display this tendency to overestimate their weight catagory. The disturbance in the women in the weight-preoccupied groups was quite localized to themselves, however, since they were able to perceive the weight category of their parents accurately.

Again, these results do not support the hypothesis of Garner and his colleagues. Based on their model, we would have expected to find the severe body disturbance in the WP2 cluster only. We would have predicted that the WP1 cluster and the NWP group would both have accurate body perception. Instead, these findings are more compatible with the continuum hypothesis. Both of the weight-preoccupied clusters showed considerably more body image disturbance than the NWP group, however, more women in the cluster with

the more pathological EDI scores (WP2) tended to be misperceivers than women in the less deviant cluster (WP1).

CHAPTER V

CONCLUSION

Garner and his colleagues (1984) identified a sample of weight-preoccupied women and cluster analyzed them into two groups based on their scores on the EDI subscales. They interpreted their findings as indicating that,

> "although there are some highly weight-preoccupied females who display psychopathology quite similar to anorexia nervosa, others only superficially resemble patients suffering from serious eating disorders" (p.255).

This study was designed to attempt to replicate and add further support to their hypothesis.

A sample of weight-preoccupied women was identified and cluster analyzed using the same procedure utilized in the earlier study. Two clusters were yielded that were similar to the two clusters discovered by Garner and colleagues, with one of the two (WP2) showing more deviant scores on the subscales of the EDI than the other (WP1).

When the two clusters were compared with each other and with a not weight-preoccupied group on items other than the EDI, the predictions based on Garner's model were not supported. We would have expected the deviant weight-preoccupied cluster to resemble eating disorder patients, while both the not weight-preoccupied group and the less deviant weight-preoccupied cluster would have been expected to have had more typical responses to items pertaining to

areas that have been associated with the pathology in eating disorders.

There were no differences between either of the weight-preoccupied clusters and the not weight-preoccupied group in family characteristics and only one significant difference in regard to relationship characteristics. When examining emotional areas and body perception, more pathological responses were found for both of the weight-preoccupied clusters, although to a somewhat lesser extent in the less deviant cluster. These findings support the continuum hypothesis.

It is suggested from the results of this study that weight-preoccupied women are more emotionally disturbed and have more body image distortion than not weight-preoccupied women. Although at the current time they appear to be functioning normally at a social level, they are suffering emotionally. It is important to conduct follow-up studies of these weight-preoccupied women to see if they are in fact at a higher risk for developing a full scale eating disorder in the future. This instrument to detect weight-preoccupation may be extremely helpful for early intervention programs if weight-preoccupation does turn out to be a predictor of eating disorders. Regardless of whether weight-preoccupation is an indicator of vulnerability to eating disorders, it is clear that weight-preoccupied women are suffering and could be candidates for

psychological treatment. It is therefore important to understand more about this group of women.

Appendix A

Informed Consent

The survey you are about to take includes a large number of items about you. However we are not interested in you as an individual but only as a representative of all of us. Your responses to the survey items will be kept anonymous for the analysis of the data for this survey. As will quickly become apparent, the items mostly concern your attitudes and responses to food, eating, diet, and how you feel about your body. There are other items about your family background, current relationships, mood, activities, etc. Your answers to these items will provide us with some of the data we need to understand more about the complex interrelationships of our self-image to our attitudes and behaviors around food, eating and dieting.

If this is an area of interest to you and you would like to help out with further experiments in this area, this semester or sometime in the future, please indicated this on the appropriate place on the answer sheet. For those who indicate their willingness to participate you may be contacted, but will be informed about the nature of any participation before you agree.

The items on the survey are not of such a nature that usually cause people discomfort. However, should you at any time wish to not continue with the survey you may do so at any time. Simply raise your hand and one of the researchers will help you. You are entitled to the appropriate amount of credit for the time you have given.

Should you also have questions at any time you should get the attention of a researcher and they will answer your question as best they can.

As we have indicated above, we are not interested in you as an individual and once all the coding and credits to your psychology class are processed, your name will be removed and kept separately from your answers and in the strictest confidence. However, as you respond to the various questions please be as thoughtful as possible about the answer and give your most honest appraisal of how you feel or act in real life. Your replies will help us understand an area of human behavior which is most important and interesting and for some becomes a problem. Thank you for your cooperation with this study and if you are interested in further information you will be given the opportunity to indicate that you would like a summary of our findings after you complete the survey.

I have read the above statement of the nature and purpose of the experiment and agree to participate.

signed_____

Appendix B

Eating Disorder Inventory (EDI)

The following set of questions should be answered as to which answer best describes you. Use the following scale:

0=never 1=rarely 2=sometimes 3=often 4=usually 5=always

1. I eat sweets and carbohydrates without feeling nervous.
2. I think that my stomach is too big.
3. I wish that I could return to the security of childhood.
4. I eat when I am upset.
5. I stuff myself with food.
6. I wish that I could be younger.
7. I think about dieting.
8. I get frightened when my feelings are too strong.
9. I think that my thighs are too large.
10. I feel ineffective as a person.
11. I feel extremely guilty after overeating.
12. I think that my stomach is just the right size.
13. Only outstanding performance is good enough in my family.
14. The happiest time in life is when you are a child.
15. I am open about my feelings.
16. I am terrified of gaining weight.
17. I trust others.
18. I feel alone in the world.
19. I feel satisfied with the shape of my body.
20. I feel generally in control of things in my life.
21. I get confused about what emotion I am feeling.
22. I would rather be an adult than a child.
23. I can communicate with others easily.
24. I wish I were someone else.
25. I exaggerate or magnify the importance of weight.
26. I can clearly identify what emotion I am feeling.
27. I feel inadequate.
28. I have gone on eating binges where I have felt that I could not stop.
29. As a child, I tried very hard to avoid disappointing my parents and teachers.
30. I have close relationships.
31. I like the shape of my buttocks.
32. I am preoccupied with the desire to be thinner.
33. I don't know what's going on inside me.
34. I have trouble expressing my emotions to others.
35. The demands of adulthood are too great.
36. I hate being less than best at things.
37. I feel secure about myself.
38. I think about bingeing (overeating).
39. I feel happy that I am not a child anymore.
40. I get confused as to whether or not I am hungry.

41. I have a low opinion of myself.
42. I feel that I can achieve my standards.
43. My parents have expected excellence of me.
44. I worry that my feelings will get out of control.
45. I think my hips are too big.
46. I eat moderately in front of others and stuff myself when they're gone.
47. I feel bloated after eating a small meal.
48. I feel that people are happiest when they are children.
49. If I gain a pound, I worry that I will keep gaining.
50. I feel that I am a worthwhile person.
51. When I am upset, I don't know if I am sad, frightened or angry.
52. I feel that I must do things perfectly or not do them at all.
53. I have the thought of trying to vomit in order to lose weight.
54. I need to keep people at a certain distance (feel uncomfortable if someone tries to get too close).
55. I think that my thighs are just the right size.
56. I feel empty inside (emotionally).
57. I can talk about personal thoughts or feelings.
58. The best years of your life are when you become an adult.
59. I think my buttocks are too large.
60. I have feelings I can't quite identify.
61. I eat or drink in secrecy.
62. I think that my hips are just the right size.
63. I have extremely high goals.
64. When I am upset, I worry that I will start eating.

Appendix C
Primary Emotions and Traits Scales (PETS)

Instructions: How frequently do you have each of the following feelings? Work rapidly, first impression are as good aa any. The same item is never repeated, so there'a no need to check for conaiatency. Please do not mark this form. Enter your answers on the opscan sheet provided, using the following scale:

1	2	3	4	5
ALMOST NEVER	OCCASIONALLY	SOMETIMES	OFTEN	NEARLY ALWAYS

1. sad
2. hopeless
3. alert
4. worthy
5. restless
6. hopeful
7. caring
8. charged-up
9. unreactive
10. angry-w-someone or-something
11. happy
12. at-ease
13. shaky
14. calm
15. pleased-w-self
16. weak
17. inhibited
18. loving
19. agitated
20. helpless
21. exhausted
22. conflicted
23. unapontaneoua
24. lonely
25. cheerful
26. worried
27. peaceful
28. joyous
29. optimiatic
30. disgusted-w-self
31. wide-awake
32. confused
33. energetic
34. gloomy
35. strong
36. suppressed
37. unconcerned
38. angry-at-self
39. annoyed-w-someone or-something
40. ashamed
41. organized
42. serene
43. capable
44. pessimiatic
45. displeaaed-w-aelf
46. disgusted-w-aomeone-or-aomething
47. tired
48. frightened
49. unenthusiaatic
50. guilty
51. unhappy
52. powerful
53. warm-hearted
54. bored
55. tense
56. depressed
57. jittery
58. relaxed
59. uninhibited
60. proud
61. disorganized
62. spontaneous
63. all-together
64. anxious
65. in-control-of-events
66. blue
67. friendly
68. furioua
69. clear-minded
70. withdrawn
71. enthusiastic
72. weary
73. cooperative
74. irritable
75. fatigued
76. helpful
77. unexcitable
78. vigorous
79. resentful
80. disinterested
81. understanding
82. uncaring
83. efficient
84. good-natured
85. shy

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